

Claims

1. Method of heating fluid comprising heating a solution comprising potassium formate in a solution heating zone, circulating said solution to a fluid heating zone to heat said fluid, and recirculating said solution to said solution heating zone.
2. Method of claim 1 wherein said solution includes 0.01% to 40% by weight of at least one of (a) ammonium formate or an alkali metal formate other than potassium formate, or an alkali metal or ammonium acetate (b) a compatible corrosion inhibitor, sludge inhibitor, scale inhibitor, freeze point depressant or pH regulator or (c) other solution-treating additive selected from the group consisting of nonyl phenol ethoxylates, alkali metal carbonates, nitrates, and phosphates, alkyl amines, carboxylic acids, polycarboxylic acids, alkyl ureas, quaternary amine compounds, glycols and polyglycols having up to 6 carbon atoms.
3. Method of claim 1 wherein said fluid heating zone is in a line heater.
4. Method of claim 1 wherein said solution heating zone is in a line heater.
5. Method of claim 1 wherein said fluid is natural gas in a natural gas pipeline transmission system.
6. Method of claim 1 wherein said potassium formate is made in situ by the reaction of potassium hydroxide and formic acid.
7. Method of claim 1 wherein said potassium formate is present in said solution in a concentration from about 1% to about 75% by weight.
8. Method of claim 7 wherein said potassium formate is present in said solution in a concentration from about 20% to about 50% by weight.
9. Method of claim 7 wherein said potassium formate solution includes at least 0.01% by weight sodium formate.

10. Method of claim 7 wherein said potassium formate solution includes at least 0.01% by weight potassium acetate.
11. Method of claim 7 wherein said solution comprises about 5% to about 70% potassium formate and 0.01% to 5% corrosion inhibitor.
- 5 12. Method of transmitting natural gas in a natural gas pipeline comprising compressing the gas for transmission in a first pipeline segment to a line heater, receiving the gas in the line heater, heating the gas in the line heater using a solution comprising potassium formate as a heat exchange medium, and transmitting the gas through a second pipeline segment to a compressing station
10 for further transmission.
13. Method of claim 12 wherein said solution comprises 1-75% potassium formate.
14. Method of claim 12 wherein said natural gas is compressed prior to entering said line heater.
15. Method of claim 12 wherein said solution comprises 1% to 75% by weight potassium formate, and including an effective amount of a corrosion inhibitor
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16. Method of claim 15 wherein said solution comprises 20% to 50% by weight potassium formate.
17. Method of claim 15 wherein said solution is circulated by convection.
18. Method of claim 15 wherein said solution is circulated by a pump.
- 20 19. Method of claim 15 wherein said solution includes 0.01% to 10% potassium acetate.
20. Method of claim 15 wherein said solution includes 0.01% to 50% of a glycol having from 2 to 6 carbon atoms.